



## UNITED STATES DEPARTMENT OF COMMERCE

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EXAMINER

ATKINSON, C

34M1/0503

ART UNIT

PAPER NUMBER

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3407  
DATE MAILED:

05/03/96

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS This application has been examined  Responsive to communication filed on 2/12/96  This action is made final.A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

## Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1.  Notice of References Cited by Examiner, PTO-892.
2.  Notice of Draftsman's Patent Drawing Review, PTO-948.
3.  Notice of Art Cited by Applicant, PTO-1449.
4.  Notice of Informal Patent Application, PTO-152.
5.  Information on How to Effect Drawing Changes, PTO-1474.
6.

## Part II SUMMARY OF ACTION

1.  Claims 1-2, 5-8 and 11-24 are pending in the application.Of the above, claims 13-20 are withdrawn from consideration.2.  Claims 3, 4, 9 and 10 have been cancelled.3.  Claims \_\_\_\_\_ are allowed.4.  Claims 1-2, 5-8, 11-12 and 21-24 are rejected.5.  Claims \_\_\_\_\_ are objected to.6.  Claims \_\_\_\_\_ are subject to restriction or election requirement.7.  This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.8.  Formal drawings are required in response to this Office action.9.  The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are  acceptable;  not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).10.  The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been  approved by the examiner;  disapproved by the examiner (see explanation).11.  The proposed drawing correction, filed \_\_\_\_\_, has been  approved;  disapproved (see explanation).12.  Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has  been received  not been received  been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.13.  Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.14.  Other

## EXAMINER'S ACTION

*Response to Amendment*

Applicant's arguments with respect to claims 1-2, 5-8, 11-12 and 21-24 have been considered but are deemed to be moot in view of the new grounds of rejection.

Claims 3-4 and 9-10 have been cancelled and claims 21-24 have been added.

Claims 1-2, 5-8 and 11-24 are pending.

Claims 13-20 remain withdrawn from further consideration by the examiner, 37 C.F.R. § 1.142(b) as being drawn to a nonelected species. Election was made **without** traverse in Paper No. 3.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1, 5, 7 and 11 are rejected under 35 U.S.C. § 103 as being unpatentable over Lebailly et al. in view of Kuzay. The patent of Lebailly et al., in Figures 1-3, in column 2, lines 35-48 and in column 4, lines 3-10, discloses a phase change liquid and an aluminum porous material (5) filled/located within an enclosed cavity formed by thermally conductive metal plates (1,2). The patent of Lebailly et al. fails to disclose the porous material being integral with the thermally conductive surface and being homogeneously disposed within the cavity.

The patent of Kuzay, in Figures 1-3 and 5 and in column 2, lines 40-58, discloses a porous material (12) bonded to a thermally conductive surface (11,24) and homogeneously disposed within cavity (10) for the purpose of constantly channelling heat from the conductive surface to a phase change fluid. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Lebailly et al. a porous material bonded to a thermally conductive surface and homogeneously disposed within a cavity for the purpose of constantly channelling heat from the conductive surface to a phase change fluid as disclosed in Kuzay. The remaining limitations are considered to be clearly met.

Claims 2, 6, 8, 12 and 21-24 are rejected under 35 U.S.C. § 103 as being unpatentable over Lebailly et al. in view of Kuzay

as applied to claims 1, 5, 7 and 11 above, and further in view of Hermanns et al. The patent of Lebailly et al. as modified, discloses all the claimed features of the invention with the exception of a solid to liquid phase change material being a wax.

The patent of Hermanns et al., in Figures 1a-3b, in column 1, lines 27-29, in column 3, lines 25-29 and in column 4, lines 22-31, discloses a solid to liquid phase change material, such as a paraffin wax (1,1b), filled within an enclosed cavity for the purpose of uniformly transferring heat. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Lebailly et al. as modified, a solid to liquid phase change material, such as a paraffin wax, filled within an enclosed cavity for the purpose of uniformly transferring heat as disclosed in Hermanns et al.

#### *Response to Arguments*

Regarding applicant's arguments, the patent of Kuzay discloses a porous, highly conductive material (12) integral with (bonded to) and thermally coupled to a highly thermally conductive surface (11,24) for the purpose of constantly channelling heat from the conductive surface to a phase change fluid. The device of Lebailly et al. as modified by Kuzay is considered to meet the claimed invention.

#### *Conclusion*

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL.** See M.P.E.P.

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Art Unit: 3407

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Atkinson whose telephone number is (703) 308-2603 (FAX (703) 305-3463/3464).

C.A.  
C.A.  
April 25, 1996

  
JOHN RIVELL  
PRIMARY EXAMINER  
ART UNIT 347